

# Alba 675

# 1975

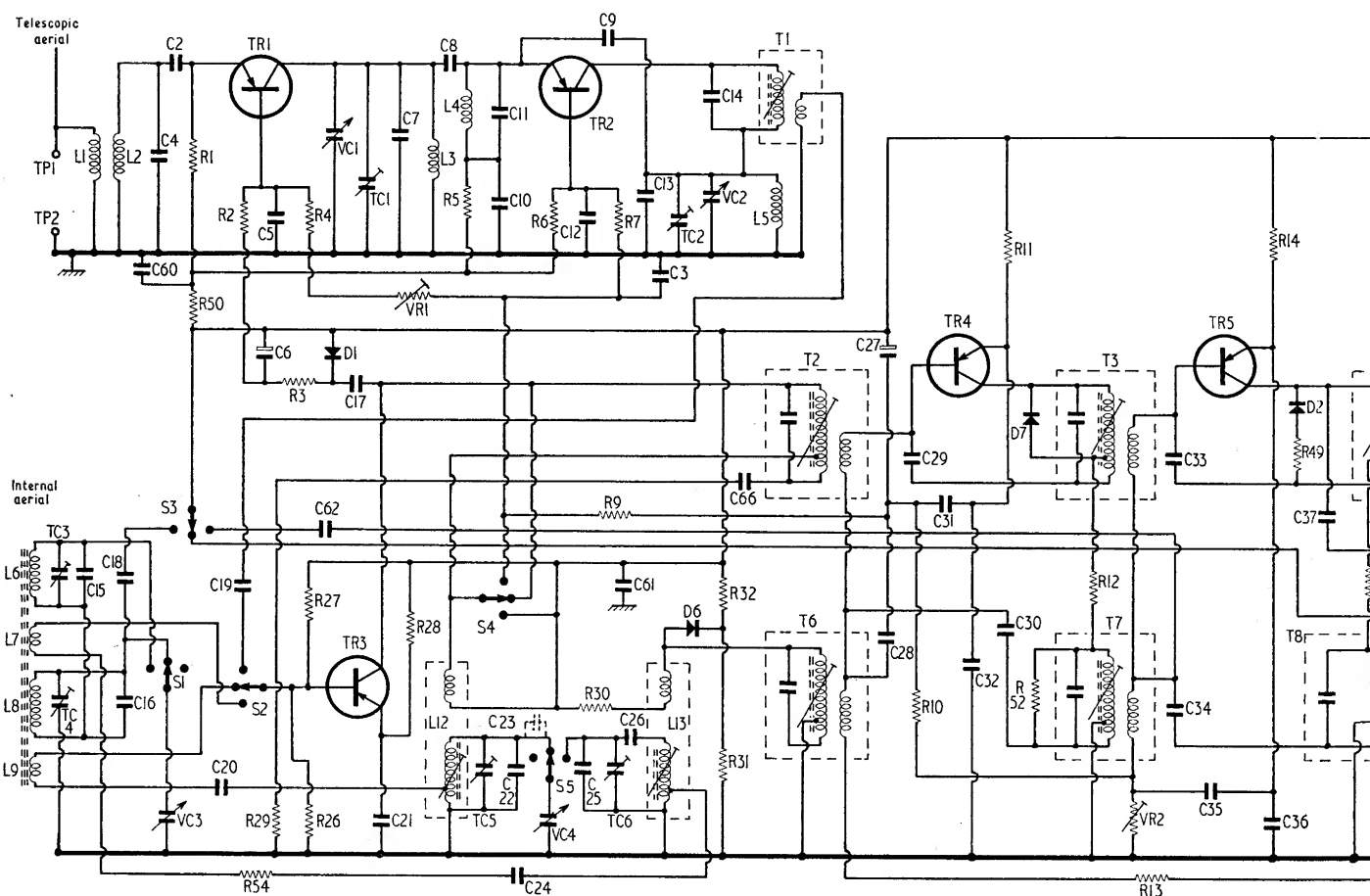
A.m./f.m. battery operated portable radio receiver

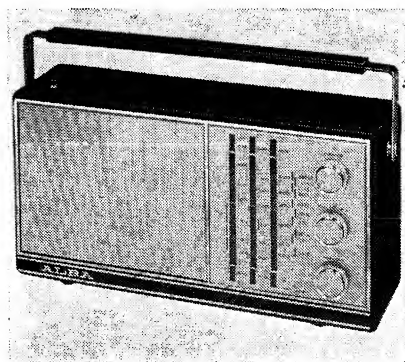
## Component values and locations

Component numbers in table and circuit  
diagram, correspond with those used in the  
manufacturer's service manual.

Resistors			R9	8.2kΩ	A1	R18	1.5kΩ	A2	R27	3.9kΩ	A1	R
R1	220Ω	B1	R10	10kΩ	A2	R19	1kΩ	A2	R28	3.3kΩ	A1	R
R2	2.2kΩ	B1	R11	680Ω	A1	R20	1kΩ	A2	R29	15kΩ	A1	R
R3	5.6kΩ	B1	R12	150Ω	A1	R21	10kΩ	A2	R30	100Ω	B1	R
R4	33kΩ	B1	R13	5.6kΩ	A2	R22	1kΩ	A2	R31	2.2kΩ	A1	R
R5	1.2kΩ	B1	R14	1kΩ	A2	R23	100kΩ	A2	R32	15kΩ	A1	R
R6	2.2kΩ	B1	R15	220Ω	A2	R24	100kΩ	A2	R33	47kΩ	B2	R
R7	5.1kΩ	B1	R16	270Ω	A2	R25	5.6kΩ	A2	R34	10kΩ	B2	R
			R17	560Ω	A2	R26	15kΩ	A1	R35	1kΩ	B2	R

C	60 4 2 6 5 VC1 17 TC1 7 8 10 11 12 9 13 3 TC2 14 VC2										27	33															
	TC3	TC4	15	18	16	VC3	20	19	62	21	TC5	22	24	VC4	25	TC6	61	26	66	28	29	31	32	30	34	35	36
R	1 50 2 3 4 VR1 5 6 7										11										14						
	54 29 26 27 28										30 9 32 31										10 52 12 VR2 13 49						
L	1 2 3 4										5 T1 T2										T3						
	6,7,8,9 12										13 T6										T7						





R27	3.9kΩ	A1	R36	68Ω	B2	R45	68Ω	B2
R28	3.3kΩ	A1	R37	2.2kΩ	B2	R46	1Ω	A2
R29	15kΩ	A1	R38	10kΩ	B2	R47	1Ω	B2
R30	100Ω	B1	R39	3.9kΩ	B2	R48	39kΩ	B2
R31	2.2kΩ	A1	R40	390Ω	B2	R49	3.9kΩ	A2
R32	15kΩ	A1	R41	56Ω	B2	R50	100Ω	B1
R33	47kΩ	B2	R42	1kΩ	B2	R51	1.5kΩ	B2
R34	10kΩ	B2	R43	68Ω	B2	R52	330kΩ	A1
R35	1kΩ	B2	R44	1kΩ	B2	R53	1.5kΩ	A2

R54	47Ω	B1
VR1	100kΩ	B1
VR2	100kΩ	A2
VR3	5kΩ	B2

**Capacitors**

C2	0.01μF	B1
C3	0.02μF	A1
C4	80pF	B1
C5	1000pF	B1
C6	4.7μF	B1
C7	16pF	B2
C8	3pF	B1
C9	5pF	B1
C10	500pF	B1
C11	20pF	B1
C12	1000pF	B1
C13	18pF	B1
C14	40pF	A1
C15	5pF	A1
C16	20pF	A1
C17	17pF	A1
C18	0.01μF	A2
C19	5000pF	A1
C20	0.01μF	B1
C21	0.01μF	A1
C22	90pF	B1
C23†	—	A1

C24	3000pF	B1
C25	10pF	B1
C26	270pF	B1
C27	10μF	A1
C28	1000pF	A1
C29	10pF	A1
C30	4pF	A1
C31	0.02μF	A1
C32	0.04μF	A1
C33	12pF	A2
C34	4pF	A2
C35	0.02μF	A2
C36	0.02μF	A2
C37	25pF	A2
C38	0.01μF	A2
C39	0.01μF	A2
C40	4.7μF	A2
C41	1000pF	A2
C42	1000pF	A2
C43	4.7μF	A2
C44	5000pF	A2
C45	4.7μF	B2
C46	0.02μF	A2
C47	0.02μF	A2
C48	220μF	A2
C49	4.7μF	B2
C50	33μF	B2
C51	0.5μF	B2
C52	33μF	B2
C53	220μF	B2

C54	0.01μF	A2
C55	0.01μF	A2
C56	220μF	A2
C57	220μF	A2
C58	200pF	B2
C59	200pF	B2
C60	0.02μF	B1
C61	0.04μF	—
C62	0.04μF	A2
C63	0.04μF	B2
C64	0.04μF	A2
C65	10pF	A1
C66	500pF	—
TC1	—	B2
TC2	—	B1
TC3	—	A1
TC4	—	A1
TC5	—	B1
TC6	—	B1
VC1	—	B1
VC2	—	B1
VC3	—	A1
VC4	—	A1

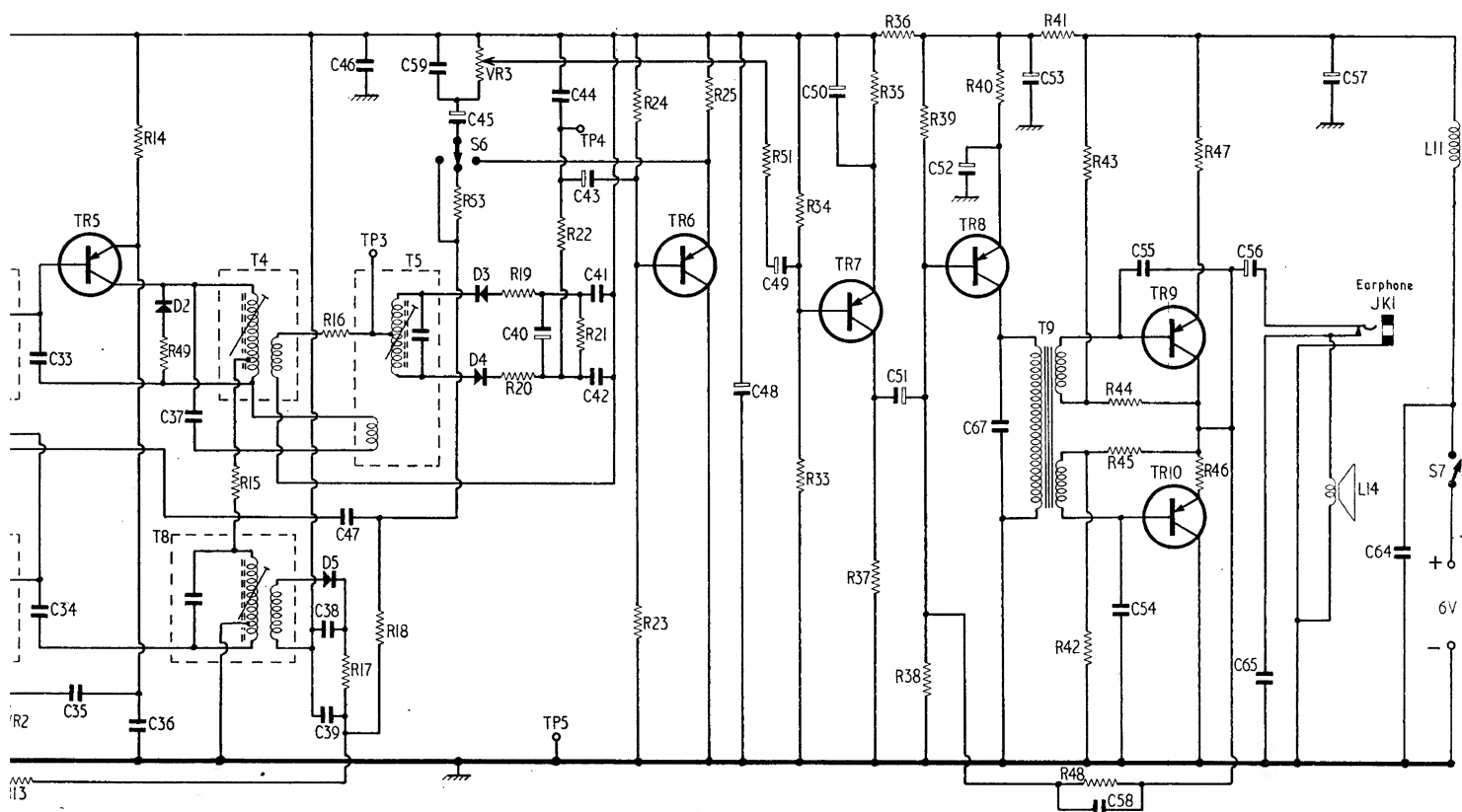
L5	—	A1
L6	—	B1
L7	—	B1
L8	—	A1
L9	—	A1
L11	—	B2
L12	—	B1
L13	—	B1
L14	8Ω	—
T1	—	A1
T2	—	A1
T3	—	A1
T4	—	A2
T5	—	A2
T6	—	A1
T7	—	A2
T8	—	A2
T9	—	B2

**Miscellaneous**

D1	1S188	A1
D2	1S188	A2
D3	1S188	A2
D4	1S188	A2
D5	1S188	A2
D6	1S188	A1
D7	1S188	A1

\* Alternative position  
† May not be fitted

33					46	59 -45		40	44	43	41	49			50	52		53	55			56		57		C			
34	35	36		37	38		39	47	42				48		51			67		58			54	65			64		
				14					16	53		VR3	19	22	21	24	25		51	34	35	36	39	40	41	43	47		R
R2	I3	49					15	17	18	20		23		33			37	38	42			48	44	45	46				
				T4		T5																		11		L			
				T8																T9		14							



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## Alba 675

### Introduction

Incorporating ten transistors and seven diodes, model 675 is a three-band battery operated a.m./f.m. portable radio receiver.

Wavebands covered are l.w. 150-350kHz. (2000-857m), m.w. 540-1605kHz (566-187m) and v.h.f./f.m. 87.5-104MHz. Reception for medium and long wave bands is via an internal ferrite rod aerial assembly, for v.h.f. a telescopic aerial is fitted.

A maximum audio output of 500mW is handled with a 4in diameter 8Ω impedance loudspeaker. A normally closed jack is fitted for the connection of an 8Ω earphone which, when in operation, provides a mute to the loudspeaker.

Operation is from a 6V power supply which is provided by four 1.5V cells, Ever Ready type LPU2 or equivalent.

### Circuit alignment

Access to all cores, trimmers and test points is obtained when the back of the receiver case is opened.

### A.M. alignment

**Equipment required.** – An a.m. signal generator, r.f. coupling coil and 8Ω impedance output meter.

Check cursor travel and, if necessary, adjust position on cord so that extreme ends of travel are equal at each end of scale, approximately  $\frac{1}{8}$ in.

Replace loudspeaker with output meter. For convenience, terminate output meter in a miniature jack plug and insert in earphone jack.

Terminate signal generator in the r.f. coupling coil and loosely couple coil to ferrite rod aerial assembly.

Rotate volume control to maximum and maintain an audio output power of 50mW, attenuating input signal as necessary so that the receiver a.g.c. does not mask alignment peaks.

1. – Switch receiver to m.w., rotate tuning gang to maximum capacitance and feed in a 470kHz a.m. signal. Adjust **T6**, **T7** and **T8** for maximum output. Repeat for optimum results.

2. – Switch receiver to l.w., rotate tuning gang to maximum capacitance and feed in a 145kHz a.m. signal. Adjust **L12** for maximum output.

3. – Rotate tuning gang to minimum capacitance and feed in a 365kHz a.m. signal. Adjust **TC6** for maximum output.

4. – Feed in a 160kHz a.m. signal and tune receiver to this signal. Adjust position of **L8** on ferrite rod for maximum output.

5. – Feed in a 340kHz a.m. signal and tune receiver to this signal. Adjust **TC3** for maximum output.

6. – Repeat operations 2 to 5 for optimum results.

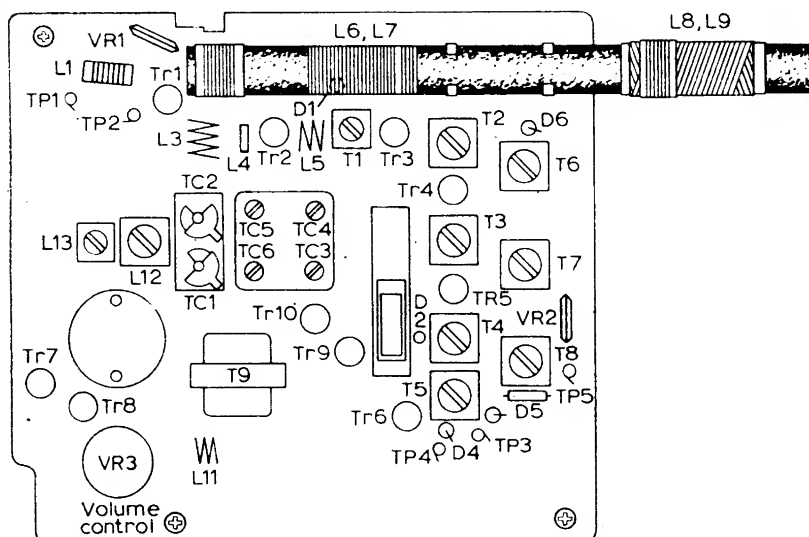
7. – Switch receiver to m.w., rotate tuning gang to maximum capacitance and feed in a 505kHz a.m. signal. Adjust **L13** for maximum output.

8. – Rotate tuning gang to minimum capacitance and feed in a 1,650kHz a.m. signal. Adjust **TC5** for maximum output.

9. – Feed in a 570kHz a.m. signal and tune receiver to this signal. Adjust position of **L6** on ferrite rod for maximum output.

10. – Feed in a 1,400kHz a.m. signal and tune receiver to this signal. Adjust **TC4** for maximum output.

11. – Repeat operations 7 to 10 for optimum results. Disconnect test equipment.



Component-side chassis illustration showing alignment points.

### Transistor analysis

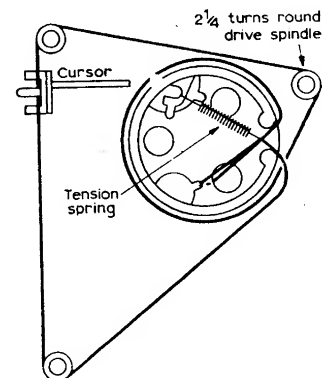
Transistor voltages given in the table were obtained from data supplied by the manufacturers. They were measured under quiescent conditions with a 20,000Ω/V

meter and are all positive with respect to chassis. The receiver was tuned to the extreme low frequency end of the m.w. or v.h.f./f.m. band and the volume control was at maximum.

Transistor table

Transistor		A.M. Emitter (V)	Base (V)	Collector (V)	F.M. Emitter (V)	Base (V)	Collector (V)
TR1	2SA440	5.3	5.1	—	4.4	3.9	—
TR2	2SA440	5.3	5.3	—	2.9	2.6	—
TR3	2SA324	4.1	3.9	—	3.1	2.9	0.15
TR4	2SA321	4.9	4.6	0.1	4.3	3.9	0.15
TR5	2SA321	4.1	3.6	0.2	3.5	3.1	0.3
TR6	2SB171*	4.0	2.6	—	3.7	2.3	—
TR7	2SB171*	4.6	4.3	1.4	4.2	3.9	1.2
TR8	2SB171*	4.3	4.1	0.3	4.1	3.9	0.25
TR9	2SB187	6.0	5.9	3.0	6.0	5.9	3.0
TR10	2SB187	3.0	2.8	0	3.0	2.8	0

\* May be type 2SB185



## F.M. alignment

**Equipment required.** – A wobulator, a c.r.o. (oscilloscope), a dummy aerial and 8Ω output meter.

Terminate wobulator in the dummy aerial and connect between test points TP1 and TP2. Connect c.r.o. between TP3 and TP5.

Feed in a 10.7MHz signal deviated 300kHz at 50Hz. Adjust **T1**, **T2**, **T3** and **T4** for maximum trace amplitude and symmetry about 10.7MHz.

Transfer c.r.o. to test points TP4 and TP5 and adjust **T5** for optimum symmetry of 'S' curve. Disconnect c.r.o.

Connect output meter in place of loudspeaker (as for a.m. alignment) and rotate volume control to maximum.

Tune receiver to 90MHz and feed in a 90MHz signal deviated 25kHz at 1kHz. Adjust turns spacing of **L5** for maximum output.

Tune receiver to 104MHz and feed in a 104MHz signal deviated 25kHz at 1kHz. Adjust **TC2** for maximum output.

Retune receiver to 90MHz, feed in a 90MHz f.m. signal and adjust turns spacing of **L3** for maximum output.

Tune receiver to 104MHz, feed in a 104MHz f.m. signal and adjust **TC1** for maximum output.

Repeat all r.f. adjustments for optimum results and disconnect test equipment.

## General notes

**Dismantling.** – To gain access to foil side of printed panel and drive cord assembly. First remove batteries then pull off the three front control knobs. Unscrew and remove the three Phillips-head screws and washers securing the panel. In order to reverse panel it may be necessary to unsolder the battery positive lead at the switch.

**Preset adjustments.** – With no signal input **VR1** should be adjusted so that **TR1** collector current is 600uA. Adjust **VR2** so that **TR4** collector current is 450uA.

